Cyclin D2 promoter, MSP primers
Accn. No. U47284   Promoter region analyzed: -1616 to -1394 bp

```
1    gagctCGagc caCGccatgc cCGctgcacCG tgccagcttg cagcacat cagggCGctg
61   gtctctcccc ttcctcctgg agtgaaatac accaaaggc CGCGgtgggg tgggggtga
121  CGggaggaag gaggtgaaga aaCGccaca gatctatct cctgtaaaga cagccttgac
181  tcaaggatgC GttagagCaC Gtgtcaggtc CGaaaacC Ggaggggt CGg accGcagtCG
241  gctcccaggg agaaagctg gcagagtgag gCGCGaaacC Ggagggt CGg aggGcagtCG
301  ggCGaaggac CGagCGtgga ggcctcatgc ctcCGgggaa aggaaggggt ggtggtgttt
361  gCGcaggggg agCGagggg agcCGgacct aatccctcac tCGcccccctc cccctccCGg
421  gccatttcct agaaagctgc atCGgtgtgg ccaCGggtc GtggcCGctg ggGgggggaa
481  tgtcagcaga tgcaggggCG aggaaagCGg ttttcctgC GtggcCGctg ggCGgggggaa
541  cCGctgggag ccctgccccC GgcctgcacGC Ggggcacc GtCGcccag
601  gggccCGGaa gagcccccag aaacaCGatg gtttctgctC Gaggatcaca ttctatccct
661  ccagagaagc acccccttc cccacctc tctctctc cttcctctgc
721  acacactctg caggggggggg cagaaggac Gttgttctgg tcccttaat CGggcttc
781  gaaacagctt CGaagttatc aggaacacag acttcaggga catgacctt atctctcggt
841  atgCGaggtt gctatttct aaaatcaccc cctcccttat ttttcactta agggacctat
901  ttctaaatg tctgaggtca cccatcttc agataatcta ccctacattc ctggatctta
961  aatacaaggg caggaggatt aggatcCGtt ttgaagaagc caaagttgga gggtCGtatt
1021 ttggCGctgct acactacag aatgagtgaa attagagggc agaaatagga gtCGgtagtt
1081 ttttgtgggt tgcctgtcCG gggccccctgg catgcaggct ggatggaggg agagggtgg
1141 ggggtggCGg gggacCGCGt ttgaagttgg gtCGggccag ctgctgttct ccttaataac
1201 gagagggaa aaggaggag attgaaagga ggaggggagg acCGggaggg
1261 gaggaaaggg gaggaggaac cagagCGggg agg CGCGggg agagggaga gagctaactg
1321 ccagccagc ttgCGtcacC Ggcttcagag agC Ggagaag ag agaggggga gagCGgagcc
1381 agtttaagg ggaggacCGg gcagcccCGa ggctctgctc GggcCGtagtt
1441 caatcctcCG ctccccttctg tctctctgcc ctcacctctc cccCGgaaaac
1501 cccctattta gccaaaggaa ggaggtcagg ccccctccct tccaaaaaac
1561 aaaaaacagaa aaacccttttt ccaggcCGGg gaaagcagga gggagaggggg cCGccCGggct
1621 ggcc     gag
```

FIGURE 1A

MSP Unmethylated 223 BP

GT TATGTTATGT TTGTTGTATG   Forward UM 22 BP MT 56

T AAAATCCACC AAACACAATCA   Reverse UM 21 BP MT 56

Msp Methylated 276 BP

TAC CGTAGGT CGATCG   F M 19 BP MT 58

CGA AATATCTACC CTAAACG   R M 20 BP MT 56

FIGURE 1B

Twist Promoter: Accn No. AC003986

Promoter Region analyzed: nts -51145 TO -51750

```
   1 cattggactg ggtttccttc cacCGaagag tgaacttctg cctctttcGa gcaccttcCG
  61 aggCGtagtc ctttggatgt tggggagCGt cagactgggt cagccccCGC GGcGCGccaC
 121 ggcccagaag ggCGagagag caggcCGgga CGcaaatcct cagcaccgtt tggaactcaa
 181 Gtcttcagaa aCGccaggac ctcCGggctg ggcCGcCGCG gtttggcctt ctggaaacaa
 241 gggttCGtct acctgaccat tgggtggctc CGCGgttgac acttttcttg gcatgccccc
 301 ccaccCGCGG ccacacaccc ccccagccc cagcaatcca aatCGgcccc aCGgacctag
 361 agggctcttg ggCGagatga gacatcaccc actgtgtaga agctgttgcc attgctgctg
 421 tcacagcca     tcCGgatgg gctgccaacG tggccaggac agtctcctcC GacCGcttcc
 481 tggggctgCG taggggttCGg gggCGctgcc CGcaCGctcC GgCGgggaag gaaatCGccc
 541 CGCGcccCGCC GgaggaaagC GacCGgggag gaagggggag ggCGgctagg aggCGgggtgg
 601 aggggcCGGc CGCGcCGGgcc agg tt tt tgaatggtt gggaggaCGa attgttagac
 661 ccCGgaggaag ggaggtggga CGggggaggg gcccctcc aaactttcCG attttataaa
 721 cttCGaaaag tccctcctcc tcaCGtcagg tgcagctctC Gccctcccc cagacacctc
 781 cctgcaCGga ggtataagac ccaatgacac tgctgccccc aaacttttCG GtccagcCGt
 841 gCGGggctctg cagcacCGgc acCGgtttcca ggaggcctgg CGggggtgtgC GtccagcCGt
 901 tgggCGgcttt cttttttggga cctCGgggcc atccacacCG tcccctcccc ctccCGcctc
 961 ccccccCGcc ctccccCGCGC CGgaggtccc tccCGtcCGt cctcctgctc
1021 tctcctcCGC GggcCGcatC Gggcc CGcc gCGcCGCGcc CGgggggaagc tggCGgggctg
1081 aggCGcccCG ctctcctct ctgcccCGgg ccCGgcCGGg cacCGCGtcCGc CGctCGagag
1141     atgcagg aCGtgtccag ctCGccagtc agCGGcaagC GgcCGCGgcCG caagCGgCGCG
1201 gaggaaagagc cagacCGGca gcagcCGGgg gggcCGCGGg agCGGgggaCG caagCGGgcCGg
1261 aCGGagcaagC GcaCGGCGGg CGGcCGGcCG gggcaggccc gggCGGgtgg gggCGGtCGGa
1321 ggCGGgCGacG agcCGGgcag cccCGGgcccag gcaagcagca gagtcCGGgctgt
1381 ggCGGGCGGGCG agctgcagaC CGGGCGGGGGg atggccaacG gagtcCGGcag
1441 tcttaCGGagg agctgcagac CGGGCGGGCGtt ccaggCGGcacc
1501 cagtCGGctga aCGGaggCGGtt CGGcCGGGCGctg gcccCGGgac
```

FIGURE 2A

1561 aagctgagca agattcagac cctcaagctg gCGgccaggt acatCGactt cctctaccag
1621 gtcctccaga gCGaCGagct ggactccaag atggcaagct gcagctatgt ggctcaCGag
1681 CGgctcagct aCGcctтctC Ggtctggagg atggaggggg cctggtccat gtcCGCGtcc
1741 cac███cagg CGgagccccc cacccctca gcagggCGg agac███gt aaggacCGCG

FIGURE 2B

Unmethylated 193 BP

tt **TG**gatgggt tgttat**TGT** FUM (3) 21 BP AT 58

c ctaacc**CA**aa **CA**ac**CA**acc RUM (3) 20 BP AT 60

Methylated 200 BP

ttCCgatggg gtttgtatC FM (5) 20 BP AT 58

ctaacCCga Cc RM (4) 19 BP AT 58

FIGURE 2C

RAR beta promoter, MSP primers   ACCN NO. AF157483

Promoter region analyzed: nt -196 to nt -357

```
   1 gtgacagaag tagtaggaag tgagctgttc agaggcagga gggtctattc tttgccaaag
  61 gggggaccag aattccccat gCGagctgtt tgaggactgg gatgccGaga aCGCGagcGCGa
 121 tcCGCagc agg gtttgtctgg gcacCGtCGg ggtaggatcc Ggaa CGcatt CGgaaggctt
 181 tttgcaagca tttacttgga aggagaactt gggatctttc tgggaacccc CGCcccCGgc
 241 tggattggcc Gagcaagcct ggaaaaatgca attgaaacac agagcaccag ctctgaggaa
 301 ctCGtcccaa gccccccatc tccacttcct ccccctCGag tgtacaaacc ctgcttCGtc
 361 tgccaggaca aatcatcagg gtaccactat gggtcagCG cctgtgaggg atgtaaggc
 421 ttttccCGca gaagtattca gaagtaatt atttacactt gtcacCGaga taagaactgt
 481 gttattaata aagtcaccag gaatCGatgc caatactgtC Gactccagaa gtgctttgaa
 541 gtgggaatgt ccaaagaatc tgtcaggaat gacaggaaca agaaaaagaa ggagacttCG
 601 aagcaagaat gcacagagag ctatgaaatg acagctgagt tggaCGatct cacagagaag
 661 atcCGaaaag ctcaccagga aactttccct tcactctgcc agctgggtaa atacacacCG
 721 aattccagtg ctgaccatCG agtcCGactg gacctgggcc tctgggacaa attcagtgaa
 781 ctggccacca agtgcattat taagatCGtg gagtttgcta aaCGtctgcc tggtttcact
 841 ggcttgacca aattaccctg ctgaaggcCG cctgcctgga catcctgatt
 901 cttagaattt gcaccaagta tacccagaa caagacacca tgactttctc agaCGgcctt
 961 accctaaatC Gaactcagat gcacaaatgct ggatttggtc ctctgactga ccttgtttc
1021 acctttgcca accagctcct gccttggaa atggatgaca cagaaacagg cctctcagt
1081 gccatctgct taatctgtgg agacCGcag gaccttgagg aacCGacaa agtagataag
1141 ctacaagaac cattgctgga agcactaaaa atttatatca gaaaaagaCG accagcaag
1201 cctcacatgt ttccaaagat cttaatgaaa atcacagatc tcCGtagcat cagtgctaaa
1261 ggtgcagagC Gtgtaattac cttgaaaatg gaaattcctg gatcaatgcc acctctcatt
1321 caagaaatgc tggagaattc tgaaggacat gaacccttga cccaagttc aagtgggaac
1381 acagcagagc acagtcctag catctcaccc agctccacc aaaacagtgg ggtcagtcag
1441 tcaccactCG tgcaataaga ca
```

FIGURE 3A

Unmethylated 163 BP

ggattgg gatgtTGaga aTGT   FUM 21 BP AT 60

C Aaccaatcca acCAaaaCAa   RUM 21 BP AT 60

Methylated 142 BP

aCCCCagCCa tttCCagt   FM(2) 19 BP AT 60

Caccaatcca acCCaaaCC   RM(2) 19 BP AT 58

FIGURE 3B

Homo sapiens serine protease-like protease (nes1) mRNA, complete cds   ACCESSION

AF024605

```
   1 accagcggca gaccacaggc agggcaggagg cacgtctggg tccctccct cctcctatc
  61 ggcgactccc agatcctggc catgagagct ccgcacctcc acctctccgc cgcctctggc
 121 gcccgggctc tggcgaagct gctgccgctg ctgatggcgc aactctgggc cgcagaggcg
 181 gcgctgctcc cccaaaacga cacgcgcttg gacccggaag cctatggcgc cccgtgcgcg
 241 cgcggctcgc agccctggca ggtctcgctc ttcaacggcc tctcgttcca ctgcgcgggt
 301 gtcctggtgg accagagttg ggtgctgacg gccgcgcact gcggaaacaa gccactgtgg
 361 gctcgagtag gggatgatca cctgctgctt cttcagggcg agcagctccg ccggacgact
 421 cgctctgttg tccatcccaa gtaccaccag ggctcaggcc ccatcctgcc aaggcgaacg
 481 gatgagcacg atctcatgtt gctaaagctg gccaggcccg tagtgccggg gcccgcgtc
 541 cgggcccctgc agcttccta ccgctgtgct cagcccggag accagtgcca ggttgctggc
 601 tggggccacca cggcgcgccg gagagtgaag tacacacaag gcctgacctg ctcagcatc
 661 actatcctga gcctaaaga gtgtgaggtc ccttgccaga gtgactctgg aggccccctg
 721 atatgtgctg gactggaccg gggccaggac ccttgccaga gtgactctgg aggcccctg
 781 gtctgtgacg agaccctca aggcatcctc tcgtggggtg tttaccctg tggctctgcc
 841 cagcatccag ctgtctacac ccagatctgc aaatacatgt cctggatcaa taaagtcata
 901 cgctccaact gatccagatg ctacgctcca gctgatccag atgttatgct cctgtgatc
 961 cagatgccca gaggctccat cgtccatcct cttcctcccc agtcggctga actctcccct
1021 tgtctgcact gttcaaacct ctgccgccct ccacacctct aaacatctcc cctctcacct
1081 cattccccca cctatcccca ttctctgcct gtactgaagc tgaaatgcag gaagtggtgg
1141 caaagttta ttccagagaa gccaggaagc cggtcatcac ccagcctctg agagcagtta
1201 ctggggtcac ccaacctgac ttcctctgcc actcccgct gtgtgacttt gggcaagcca
1261 agtgccctct ctgaacctca gtttcctcat ggaacaatga cgtgcctacc
1321 tcttagacat gttgtgagga gactatgata taacatgtgt atgtaaatct tcatgtgatt
1381 gtcatgtaag gcttaacaca gtgggtggtg agttctgact aaaggttacc tgttgtcgtg
1441 aaaaaaaaaa aaaa
```

FIGURE 4A

Sequence analyzed: nts +169 to +349

Exon 3 sequence

cCGcagaggc GgCGctgctc cccaaaaaCG acaCGCGctt ggac gcCGaa gcctatggCc cccCGttgCGC
GCGCGgctCG cagccctggc aggtctCGct cttcaaCGgc ctctCGttcc actgCGCGg tgtcctggtg gaccagagtt
gggtgctgaC Ggccccaaca a

FIGURE 4B

Unmethylated 128 BP

tTGtagaggT GgTGgttgtt   Nes1 FUM 20 BP AT 56

CACAcaat aaaaCAaaaa acCA   Nes1 RUM 22 BP AT 56

Methylated 137 BP

tCGa gttagggCG tttc   Nes 1 FM 20 BP AT 56

t tagttcCGca ataCCGac   Nes1 RM 20 BP AT 58

FIGURE 4C

HOX A5 Promoter 3' to 5'   AC004080

16321 accaagagag actgggagag ggCGgcagag aagagaaggg ggacCGagag cCGCGtcccc
16381 gCGgtCGCGt ggatttagaa aaaggctggc tttaccatga cttatgtgca gcttgCGcat
16441 ccaggggtag atctggggtt gggCGggCGg CGCGggctC ggctcCGctct gCGcactCGc
16501 ctgctCGctg ctggcaaggg CGtcctcctC GgctccGgaC GccGGtgccaa cccctctct
16561 gctgctgatg tgggtgctgc CGGcCGtCGgc CGaggCGCGCG ctggagttgc ttagggagtt
16621 tttccCGctg tggttggctgt CGGctgcCGGg CGGaggggggcc aCGGcCGGgagc agggcagCGg
16681 atCGGggctga ggagagtgCG tggaCGtggc CGGgctggctg tacctgggct CGGgcCGGgagCGGc
16741 CGCGctggCGG ctggcagCGt agctgCGGggC CGGgctgggctg gagccaaagt ggcCGGggagcc
16801 CGGagCGGgcCG aCGGctgagat ccatgccatt gtagcCGGtag ccCGtacctgc CGGgagtgcat
16861 gctCGGcCGGag tccctgaatt gctCGGctcaC Ggaactatga tctccataat tatgcaactg
16921 gtagtcCGGgg ccatttggat agCGGacCGGca aaaatgagttt acaaaataag agct⬛ttg
16981 tttttttgata tgtgtgcttg atttgtggct CGGCGGgtCGGtt acttggttcc ctcctacGGta
17041 gcacaattta tgatgaatta tggaacatgt tgggacatgt tgttgtccag tCGGtaaatcc
17101 ggcacccaaa tatgggggtaC GacttCGGaat caCGGtgctt ggagttgggt ggaggCGGgagg
17161 tgcctgatga cctctagagg taaactCGGtg cactaatagg tgccCGGccagt cagcCGGgact
17221 ggggtggCGG CGCGCGccccCG ggCGCGCGtgcc ccagctt tgcCGGcCGGtt cagcCGGgact (?)
17281 CGGagCGGccac cCGGctggagg cagggctcat gcCGGccagctt cCGGacCGGgggg gctgcaaggg
17341 cCGGgggtCGGa attgaagtta cagcccatta ttgcatttc cctCGGcagtt
17401 ccattaggat gtaccaattg ttaggcCGGtc agctgcCGGat CGGCGGCGGcccCG gCGGaggatgc
17461 agaggattgg

FIGURE 5A

Complement- 5' to 3'   Promoter region analyzed: nts -97 to nts -303

ccaatcctct gcatcctc**CG**c **CG**ggc**CGCGCG** atc**CG**gcagct ga**CG**gcctaa caattggtac atcctaatgg

aactgc**CG**agg gaaatgcaat aattttgcca taatgggctg taaactcaat t**CG**acccc**CG**g cccttgcagc

cc**CG**gtc**CG**g aagctgggg**CG** atgagccctg cc__gtcCG__ agtc**CG**gctg aa**CG**gc**CG**gca

actggc**CG**gc**CG** ggca**GCGCG**cc **CG**ggc**CGCGC** **GCG**ccaccc.cct**CG**cctcc accaactcc cctattagtg

ca**CG**agttta ccctagagg tcatcaggcaggattta**CG**a ctggacaaca aaagca**CG**tg att**CG**aagt**C**

Gtaccccata tttgggtgcctacta**CG**t**ggag** ggaaccaagt acatgtcca gtcatttcca taattcatca

taaattgtgc aaggggtgcta taga**CG**aca aa**CGa**c**CGCG** agccacaaat caagcacaca

tatcaaaaacaa __agct__ cttatttgt aaac **GtgatCGagc** aattcaggga ct**CGg**c**GCG**agc atgcactc**CG**

cagttgcata attatggaga tcatagttcc __Gt__ ggctc**CG**gcc acttggtct

gcaggtac__CG__g cta**CGg**ctac aatggcatgg atctcag**CGt** **CGGCGC**ctcg

CGgagagc**CGC** **GCC**c**CG**cagct a**CGC**tgccag **CGC**cagc**GCGC** gcg

caCGtcca **CG**cactctcc tcagcc**CGat**

FIGURE 5B

UnMethylated 213 BP

t**TG**gt**TG**g aagttggg**TG**   **FUM 18 BP** AT 56

gta**TG**tg att**TG**aagt**T** Gtatt

aata**C A**acttC**A**aat ca**CA**tac   **RUM 22 BP** AT 56

Methylated 183 BP

ttagc**C**cg gtcg**C**cttcc   **FM 18 BP** AT 58

ta**CG**tg att**CG**aagt**C** Gtat

gta**C C**aecttC**G**aat cae**CG**ta   **RM 20 BP** AT 56

FIGURE 5C

Sequencing 307 BP

atttgtta taatggttg taat   Hox A5 Seq. F 23 BP AT 56

ggag ggaattaagt atatgtt

aacatat acttaattca ctcc   Hox A5 Seq.R 21 BP AT 56

Hox Exp F 20 BP AT 60

ccaggta cagccagccg gc   Hox Exp R 18 BP AT 62

FIGURE 5D

Homo sapiens 14-3-3 sigma protein promoter and gene, complete cds.
ACCESSION No. AF029081

```
   1 ggatcccagc ctgcccctcc acttctctcc caagccaggt cccggcatgg gtgggttatg
  61 ctcatgctgg caatacttga aacgggttta ttaatgctgg gtatttgca caatttata
 121 gacctctttt ctacatagtc tttttaaat ggaaggagaa aatgtcagcc acattactgt
 181 ctgtgtagtg ccaggtgaag ggttatcaga aggctggttg gtttaataa gtttattcca
 241 agagaccttc tggctggaat gagtgagagt gtgtgtgcat gtgtgtgtgt gttcatgtgt
 301 gccctgtatg aatgtggctg gctcccagat ccctgggct gccccctgcc ccatcccctt
 361 tgagtatcag aagcactctg agccaagggg acaggggca cgtgcactgg tcacgagaaa
 421 accctgggct cccactgggg ctcagcccag cctcctatct ttccttcttc tatggacttc
 481 agacagccag tgtctgggga ctctgccact ctacccccag ccctacccac cagcccccag
 541 gtgaggcttc cagctgggac aggctgagcc tgggcgtggt gggtggggtg
 601 atggctctgg gggacgggctg ccatcctaca agccacaccc cctcctctga gctctgaata
 661 tgggacccag tgccaggagc tggaagacaa ggtgttctg ccaaacggga cctccatcca
 721 gagaaaagga agaaggtgca gggtgggcca agaggcaagt gaaggttggc ctgagtctgg
 781 gccggaaact cagaggatgt ttctcctctg ctgggagctg tagttttctta tcaaaataga
 841 tattgttcca ccatcccct cctggccct tcaagtgggc tgaagccttg gaaagtgaca
 901 taggaagtcc ccagatcttg ccctctcac tccagaggct agtggtcaca gacagctggg
 961 aatggcagcc acagagggtc cctctggaga aacagcttca cccagccctc agggccctgg
1021 gcatcactgc agtggccctg ggaggtgagg aagaagctgg ctagaggagg gggctcccac
1081 ctaccttta tttaagccag tattctttgt tcctgcttgt aataaaactt cagtttataa
1141 gagttgcttt gctttggttt ggtttttgtt tgcttttcct ttgctgaggc cccaactggg
1201 agccctctgt tctttcagac aaatttggtt ctttcctggg gagactgtga gaaggcaggc
1261 agcccagtga tctggctaca ttttccctca cctggctgga gctctgtccg ctggagaag
1321 agcagagagg gctgcggctg agcccccatg ggcacgtgaa aagaggccat cctgtccct
1381 ctttgtcccc tccaccttcc cctgcctcag gggcttggag accccaaatt cttcttcct
1441 actgcctttc cactccgatc cccaatgagt gccccagcta a gaaaatgttt gagacagtag
1501 attccagtt gagagccgga gcttccctgg ctaccactc caacctgggc accagggccc
1561 agccagacaa ctcataaacac tggcccacct ctctggtatc tccctcagga ggacacctgt
```

FIGURE 6A

```
1621 caggattttg ccatctcctg cacagcctga ggggagctaa caggcctctt tgcagagggt
1681 tagctggtaa gaccgtttct tccctgtcgg ccagcactgc ccgctcccct ccacacacca
1741 tctcatcctc atcgcatgcc tcgccaaccc catggagccc gtccatctgt ctggtgtgtg
1801 gtgcggtgtg tgtgctggtg gtggtaggt ctccagggac tcccgctaa gcagaaggat
1861 cgggatatag ggcaaggcta aaagcccagc cccattgtgg actgaggaag tacgttcgcg
1921 cagagcagct cttcagctgg aagaggaggt gggaggtgag gctggggaga ggatggcgaa
1981 cctgccctga ggtgcttggg tctgtgctgg tgggtcctg gtatgcaggg gccaccggtc
2041 actaacactc ttatgtcctg gctttctgtc cccgctgagc tttctctcac ccgcccgttt
2101 tctctcctgc ttcattgcct gctgcctaag cccttggccct tctctcgggc agaggcaggt
2161 gctgtggcag cacctctccc caccacgggg cccctgcaag ccgcctccct cctccaggc
2221 ctgctaaccc tctctcttct ccttctttgc tgtcctgccg gggatctcca gtgtgtcggg
2281 gggcttaagg acctcctgct gaccgctgct ctctgcctct ccaggaatgg cctgggggga
2341 gccaggcacc cggcaactcc acctgcctaa cctgtggccc atctgccacc atctgtgcct
2401 acagggtctg cccccccagcc tgccccggcct gtgtgctctc taggaccca taggggcag
2461 gggctggcct ctttgcccca ttccccgctcc atgccggcca gagtgtagaa agccataacg
2521 cacgcagcca tcagcacaat aatgtgactc tacgctgata tgctccctct ctctccact
2581 gacttcccct tcccggatt gtgaggtgtc aagactagga atctggcctt agagcctgcc
2641 cctccacccc ctcagatcag gcatagccat agtcaagccc agcaggtttc ctcaggagct
2701 gtctggggtg ttgatggtgg atgacgctgc tgaacaagtt tggtgactgt tctaagcaca
2761 actggcttga tactgttccc acggcctgcc cacctccac cccaaccct ccaacagagt
2821 aggtaggatg tagggaggt gcgtgccgcc tttgctctag gcactgaggg accaagctag
2881 ccgtgcacag ccccatacac ttcagggcg taaagcagcc agctgagcca aggaaaatca
2941 gctgagccca gggctggggg ctgcttgtct gctatcctgt acctttttt tttttaacca
3001 aaataaaagat tcccctcttc ttggccatacc attggctgtc tggtggcgcc tttactttgg
3061 ggccaaggga tgggacctgc agtgggcgtg tggaacatat ggctcccct cgctcccagc
3121 tttcttccag ctggccagtg ctgctctgga gatttacaag cacaacgaag ccaggaggga
3181 cacaggaaaa gtggctgaca tccttttcac tctgccccc cagaactctt ggtctcaatt
3241 ccagacacca cccagcctta gctgacctct ggattctgat aggtccccgt gcaggctgag
3301 acagagggtt taactccagt ttgggactgc catacccatg aactgagccc agcccaaggt
3361 aacgatctca tggaaacttc tctctcccca gttgctgcac tacatcaaga tacacacatg
3421 tgcatacact gtactatggg ctaaaaaaat acgtaccgct accgttcagc aaggcttgc
```

FIGURE 6B

FIG. 6 of 6 (cont'd)

```
3481 cgagtcccgg gccattttc tcatcttaac ctgtgaggag gatgatgtca gccttttac
3541 agatgaggga actgagactc aaggaagaaa caggagctgc ccaaggtcac ccagctggca
3601 aagcagcaaa tccagatcg gaacctgatc tctgcccga gctctgagcc atctgcacta
3661 cccaaggaat gaatacagcg gtgggaggat gagatcttgg agaaaccta aaattagaga
3721 atgtcatagc cagtagaggg cttagagttg atctggcca gctccttgt tttactgatg
3781 gagaaattga agcccagagg caggaaggga cctgcccaag gccttataac agagctggga
3841 tgcagtccca cactcgacc tcattccatt ctctctcat aaattctgca ctgtctctag
3901 actggactgg tttagatgtg ggatactcta aacagcagtg cctccaagag aaaaagaatc
3961 agaactacga atcacttaaa agtaatgtaa gctactctgg gcacactgcc tatgggtcg
4021 ccctgctcca caaggagca caaaaataat taaaaataaat taatatccct tccccaaggt
4081 aaccagtaaa gtaagctctt ggctaggtaa ctggacttctt gttcacaact agccagtggg
4141 aaaaggtgct agagcttcct ctggccact gttaattg atcattccaa gacagaaaca
4201 tttcttagga agttctttct agaatctacc tggtgtccct cccactgcta tcagagccct
4261 gtcctctgtc ctcagtggag gtagagagca aatggttgct gctttcttca tcacaaccct
4321 tcaaaagccta ttattaccag ctaagaagga ttggttgact atggccaga gccctgagc
4381 ctgctggtag aatggatgct gtacaggagg gtggggaggt agcaggcaga atgaggaaag
4441 cccctttgag ctgcaacccc agctccctgtc ctgctgactc agacagctga ctgtggagct
4501 ccatgccctg ccagggcctg ctgcctcctg ccgtctgag ctcctgaact tgggaaatgg
4561 aggcccagag gcaaagggag gtacctgaga caggaactga gtcaggatca acaggccaga
4621 gcgggcagga ggtatcaggc agcctggctc ccagatgcac ccctgagctc cagcagggga
4681 ggagtaggaa tgaagggct tccttgccct tgctcatggc tatgcggagg gcgtgaacca
4741 ccaccaggtc ctctggctta agtggcggga agcaaatggt ccctccctgg actcaggctc
4801 caaagttcct gggcctgcct tccaggttcc cagtgtcctg ggatctccag ctttcccag
4861 gacttgggga agccccggct ggatgactag tacaaatgaa ggcccctgag gttccaggac
4921 ctgctgaggt cacaggaata tcctagatca agcttgtcca acccacgcc cacaggctgc
4981 atgtggccca gaatggcttt gaatgcagcc caacacaaat tagtaaactt tcttaaaaca
5041 ttatgagatt tttttgcaaa tttttttttt ttttttagct catcagttat tggtagtgtt
5101 ggtatattt atgtgtggcc caagacaatt cttccaatgt ggcccaggga agcacaaaga
5161 ttggacacgc ctgtcctaga ggagaggaa ggaggcagtg ctgagcacat ctggccattc
```

FIGURE 6C

```
5221 atccatctgg agagagaagg ctatgggcaa actgcttcct ctcccctgta gacacccagc
5281 tgggaaggtc tggcctttgg taagtcctgg cttgggtcc ttcctcattt cacagaacct
5341 aactctatgt tagtgctttg tgagtatatg ttgatcataa taaagttgac gggatttttt
5401 cacatgataa taatagttgt catctggccg ggcatggtgg cttatgccta taatttcagc
5461 actttggaag gctgaggcag gtggatcact tgaggtcagc tgttcgagac cagcctggcc
5521 aacatggtga aaccacatct ctacttaaaa aaaaaaaa tacaaaaatt agctgggtgt
5581 ggtggtgcac ccttgtaatc ccagctactc gggaggctga ggcaggagaa tcacttgaac
5641 ccaggaggtg gaggttgcag tgagctgaga ttgtgccact acactccagc ctgggtgaca
5701 agagcgaaac tccgtctcaa aaaaaaaaga aataataata atataagttg ccatccattc
5761 tactgtgctt tccattaact cgtgtaatcc tcacaagtcc cattttatag ttacaggaac
5821 tgaggctcac agagcttaaa tcacttggcc aaggccacaa acagctataa gaattacatt
5881 taggcagtct gattccaaag atactagtct attctgtatc tcatagacaa acaatacata
5941 ttcacttttt tgttgttgtt ttgtttgag acggagtctt gctctgtcac ccaggctgga
6001 gtgcagtggc gccatctcgg ctcactgcaa cgtccgcctc ccgggttcaa gcgattctcc
6061 tgcctcagcc tcccgagtag ctgggactac aggcacgtgc caccatgccc ggctaatttt
6121 ttgtattttt agtagagaca gggttttcct gggttagcca gaatggtctc gatctcctga
6181 ccttgtgatc caccacctc agcctcccaa agtgctgaga tgacaggcgt gagccaccgc
6241 gtccgaccta tattcactat ttataaattg gagagaataa gaaaatcaaa aggccaggt
6301 gtagtgactc acacctgtaa tcccagcact ttggtgaagcc aaggcaggag gattgcttga
6361 acccagaagt tcgagaccag cctgggcaac atggtgagac cctgtctcta caaaaaatac
6421 aaaaattagc tgggcgttgt ggtgeageac ttattcttag gaagctgagg caggaggatc
6481 acctgaggcc aaggaggttg agactgcagt gagctgtgat cataccactg tacttcagcc
6541 tggacatcag agtaagactc tatctctaaa aaggaaattg agaagaaaga aaatcaaagg
6601 gaagcaaaat cactcactct cctacctca tgatttgagc aaaatctttg tatttagtg
6661 tggttcctat tgtttctgt gtcagttctc tgttagcatt agcccagaca tgtccctact
6721 cttaaaatcc cctttacttc cttggaaacc ctgtagcatt agccagaaca agccgtcaaa
6781 cctcctgtg gcaaagagaa ggatctcgtc tttggtcccc agagtctctg cctaagcctc
6841 cctccaggag ggaagatgag tgttcagaca ctcagagtag ctggggggaga cacaggcctg
6901 tgaaattatc ctggctcaac tattaagtcg gcagaatccc agtgaaggga gccctacctc
6961 tgagccccat ctaagctttg gctatgggtg gggcagataa gcaggaatcc atccctatag
```

```
7021 gctcaatgcc aacacccta ggtgaaactc ttgatgaaac ttgaggccag ggctccggca
7081 agcagggaaa gaacgttggc aacagaggtc tccatctctg aggactctgc caggggtcag
7141 agatggggca atggtcaaaa ggaaggaaca ggccaggcac agtggctcat gccataatc
7201 ccagcacttt gggaggctga ggcaggagga tcgcttgagc ccaggagttt gagacctgcc
7261 tgggcaatgt agtgagatct gctctctatt taaaaaggaaa aaaaaggaaa gaacaagtaa
7321 acttctgaga aacaggctgg gggaggcatc acgtagctgg aattgctgcc ccataaaaca
7381 gaatggtatg tgtcactgcc acctcccttt ctcagtcctc tctctcccca ggttgctagc
7441 gtcccctgg gggatcaaac tggactgctt cccagcctca gacagagagc agtctgagtc
7501 aggcaggaaa gtgggacagc cggggagctg gacccaccc tctgttgagc ccgctggtac
7561 ctgatggcat gtggcttgga gaggcaggt gacctggcgt ggagggccag agggtaaatc
7621 ctcaaacaag tggcaacagg ccaccaactt gaaagggaaa attgtgtagt gatgggaaat
7681 gtgtccaaca aacctactgg gtgactaatt acaaaggctg ggctggagct tcagaggctg
7741 cttgttaaac acttcattaa gcggcacctc gaaagctgcc acctgcgcat tctgggagct
7801 cagaggggac cctgagggg aatgaggcct ggaggatgga accatcttca ggtagactga
7861 gaaggagcct ggatctcact tccaaacaca gtctggagct cataggtcag aggcctcaat
7921 gggagaaaag ctaaaggaag agggtgcaga aaggaatttg tgctatgtg
7981 actttgagca aatctcaccc ctctctgaga cttagtgttc ccatctctat ggtcctgtgt
8041 gtgtcacaga gacatggtgg ggattaaatt cgatcgtgat atgaaaagtgc ttggaaact
8101 ccatggccct aacctaaacat gagttatcct cacctgaacc aaggggggaa gttacctggc
8161 aggattagga accccatcct cctgaacctt tatgggctct gtcgaggctg aagcagccag
8221 gggctaaagc cagtccttag ccctggaag ggcactgtga aagtggatct gatttgagaa
8281 gccgtttcct gatgtgggca gccagtgtgat gccagccccg aacaagaggg ggcagcctgg
8341 agcctggaaa ggtgccagtg caggtgggc ccaagcccag atttctcctg ctgactgttc
8401 tgatgattca ccccacatc ccagcctttt tacctttact gcagagaccg aaagggtgtg
8461 gggaagagag gagagggagg cagtgtcttgg gccctggtcc cgcccctgc tcctcccac
8521 cctctctgg gcctggccac ccagccaaaa ggcaggccaa gagcaggaga gacacagagt
8581 ccggcaattgg tcccaggcag cagttagccc gccgcccgcc tgtgtgtccc cagagccatg
8641 gagagagcca gtctgatcca gaaggccaag ctggcagagc aggccgaacg ctatgaggac
8701 atggcagcct tcatgaaagg cgccgtggag aagggcgagg agctctcctg cgaagagcga
```

FIGURE 6E

```
8761   aacctgctct cagtagccta taagaacgtg gtgggcggcc agagggctgc ctggagggtg
8821   ctgtccagta ttgagcagaa aagcaacgag gagggctcgg aggagaaagg gcccgaggtg
8881   cgtgagtacc gggagaaagt gggagactgag ctccagggcg tgtgcgacac cgtgctgggc
8941   ctgctggaca gccacctcat caaggaggcc ggggacgccg agagccgggt cttctacctg
9001   aagatgaaag gtgactacta ccgctacctg gccgaggtgg ccaccgggtga cgacaagaag
9061   cgccatcattg actcagcccg gtcagcctac caggaggcca tggacatcag caagaaggag
9121   atgccgccca ccaaccccat ccgcctgggc ctggccctga acttttccgt cttccactac
9181   gagatcgcca acagccccga ggaggccatc tctctggcca agaccacctt cgacgaggcc
9241   atggctgatc tgcacacoct cagcgaggac tcctacaaag acagcaccct catcatgcag
9301   ctgctgcgag acaaacctgac actgtggacg gccgacaaog ccgggaaaga ggggggcgag
9361   gctccccagg agccccagag ctgagtgttg ccgccaccg ccccgcctg ccccctccag
9421   tccccccacc tgccgagagg actagtatgg ggtgggaggc ccaccctc tccctaggc
9481   gctgttcttg ctccaaaggg ctccgtggag agggactggc agagctgaag ccaactgggg
9541   ctgggggatcc cactcttctt gcagctgttg agcgcaccta accactggtc atgccccac
9601   ccctgctctc cgcaccccgct tcctcccgac cccaggacca ggctacttct cccctcctct
9661   tgcctcccctc ctgccctgc tgcctctgat cgtaggaatt gaggagtgtc ccgccttgtg
9721   gctgagaact ggacagtggc aggggctgga gatgggtgtg tgtgtgtgtg tgtgtgtgtg
9781   tgtgtgcgcg cgcgccagtg caagaccgag actgaaggaa agcatgtctg ctgggtgtga
9841   ccatgtttcc tctcaataaa gttccccctgt gacactcctc ctgtctctct tccagttctt
9901   ggcggatgggc tgggagtggg actggggaatct gacttagaga ccctgactt ggacctctga
9961   gttaggccc tgaactccct aggtggctca gtggcccgca cgcaagactt tgagtccagg
10021  tgaggccggg gtcc
```

FIGURE 6F

H.sapiens Wilms tumor (WT1) gene promoter.   ACCESSION No. X74840

```
   1 agcttgcagc cccagccagg gccagccagg tacaggaggc cggactgcaa ccggttgctt
  61 ccctcccgtc gcgcctggcc gtcccacgct gcgccgtcgc tgctgcctcc tggcgcccct
 121 gggatttat acgcacctct gaaacacgct ccgctccggc ccccggttct tctccttgcc
 181 taggggttgt ttcccaatag atactgactc ctttagaaga tccaaaaacc aaaccaaaac
 241 acccctacc cgcccacaac acctgctctg gggcgcgggg gctgccaaac agagactaga
 301 cgaagggagt cagatttagc gaantcttcg agctccaaa gattcgaaca ctaactcgcg
 361 cccgtgggcc gatggaggtt ctccctactc cactccttgg tcccttaac tggcttccgc
 421 ctcctggtca atcactgagc aaccagaatg gtatcctcga ccagggccac aggcagtgct
 481 cggcggagtg gctccaggag ttaccgctc ctgcgggct tcgtatccaa accctcccct
 541 tcaccctcc tccccaaact gggcgccagg atgtccggc cggaatatac gcaggctttg
 601 ggcgtttgcc caagggtttt cttccctcct aaactagccg ctgtttccc ggcttaaccg
 661 tagaagaatt agatattcct cactggaaag ggaaactaag tgctgctgac tccaattta
 721 ggtaggcggc aaccgcttcc gcctggcgca aacctcacca agtaaacaac tactagccga
 781 tcgaaatacg cccggcttat aactggtgca actcccggcc acccaactga gggacgttcg
 841 ctttcagtcc cgacctctgg aaaccacaaa gggccacctc tttcccagt gacccccaaga
 901 tcatggccac tcccctaccc gacagttcta gaagcaagag ccagactcaa gggtgcaaag
 961 caagggtata cgcttcttg aagcttgact gagttctttc tgcgcttcc tgaagttccc
1021 gccctcttgg agcctacctg accctccctc caaaccactc ttttagatta acaaccccat
1081 ctctactcc accgcattcg acctcactgc ttacctgaac ggactctcca
1141 gtgagacgag gctccacac tggcgaaggc caagaagggg agggtgtgtgc
1201 cacaccggcc agctgagagc gcgtgtttggg ttgaagagga gagaggaccg
1261 ctccctcgga cccgcccctca cccagctgc gaggcggccga gccctggc gcgcgcgctg
1321 cctggccggg cttgggctgc tgagtgaatg gagcggccga gcctctggc tcctctctt
1381 cccccgcgccg ccggccccctc ttatttgagc tttgggaagc tgagggcagc caggcagctg
```

FIGURE 7A

```
1441 gggtaaggag ttcaaggcag cgcccacacc cggggctct  ccgcaaaccg accgcctgtc
1501 cgctccccca cttcccgccc tccctcccac ctactcattc acccaaccac cccaccagag
1561 ccgggacggc agcccaaggcg cccggtcccc gccgtctcct cgccgcgatc ctggacttcc
1621 tcttgctgca ggaccccggct tccacgtgtg tcccggagcc ggcgtctcag cacacgctcc
1681 gctccgggcc tgggtgccta cagcagccag agcagcaagg agtccgggac ccgggcggca
1741 tctgggccaa gttaggcgcc gccgaggcca gcgctgaacg tctccagggc cggaggagcc
1801 gcggggcgtc cgggtctgag cctcagcaaa tgggctccga cgtgcgggac ctgaacgcgc
1861 tgctgcccgc cgtcccctcc ctgggtggcg gcgggcggctg tgccctgcct gtgagcgggcg
1921 cggcgcaagtg ggcgccggtg ctggactttg cgccccccggg cgcttcggct tacgggtcgt
1981 tgggcgggccc cgcgcgcca ccggctccgc cgccaccccc gccgcgcccg cctcactcct
2041 tcatcaaaca ggagccggagc tgggggcggca cggagccgca cgaggagcag tgcctgagcg
2101 cctttcactgt ccactttttcc ggccagttca ctggcacagc cggagcctgt cgctacgggc
2161 ccttcggtcc tcctccgccc agccaggcgt catccggcca ggccaggatg tttcctaacg
2221 cgccctacct gcccagctgc ctcgagagcc agcccgctat tcgcaatcag ggtaagtagg
2281 ccggggagcg cccta
```

FIGURE 7B

Estrogen Receptor (ER): Homo sapiens estrogen receptor beta gene, promoter region
and partial cds   Accession Number AF191544

```
   1 actatagggc aCGCGtggtC GaCGGccCGg gctggtattg atagatgcat tttcttcacc
  61 ctcacctatc tttttctgcc tgttggaaat tccttcatga CGgtttccat tttttttttt
 121 ttccagagat atcttgttaa ccaccaaatg aagctgatt tttttttttt
 181 tttttttttga gacagagtct cccaggctgg aatgcagtgg CGCGatcttg
 241 gctcactgca acctcCGcct cccatgttca agCGattctc ctgcctcagc ctcctgagta
 301 gctgggatta ctggcatgtg ccacCGCGtc cagccaattt ttgtattttt agtagagaCG
 361 aggtttcacc atgttggtca ggctggtctc aaactcctga cctCGtgatc cacctgcctc
 421 ggcctcccaa agtgctggga ttataggtgt gagccaccat gctggccat gaagctgatt
 481 ttttaaaac atcatttaac attttctcca taaggtggca aggaggaaga gcatatgggg
 541 actgggtact ttgagagacc ccaggacagg agacaggag gctgagattg gcatgttgtc
 601 tgctgcagtt atttgccagc C Gacacactct ttccCGtccaa actaacttct ctgcctcaag
 661 gacaggaga ctctgccttt caaacctgaga gaaaccaaga ctctcagctt taatgaaaat
 721 tggacttagg gtgggcagt ggagacttt cacagctatt gtttagctga tgaagcagat
 781 gcttctccat ctttggaccc tgtcttcatt acctgttgac ctcatcttta tcaaccaga
 841 gcacacttgC Gtctctctat tttggctaaa caccaaaacag ctgaggctgg tactgtaaaa
 901 ctttccctcc aaatgccccc cctCGtcttc ctctattaga gatctggatc acaaccctca
 961 aaaacatgt cccttatgcc acctgagtag atggtttgat gattaattag gcacagatgt
1021 gacactgggg gggtctcaca atggcctgtg ggtcacatgc tacttttcctt ttcatttca
1081 tcagcaaacag ctgccttaaa gccagttaag actgtggtcc tagtctCGca ccctgggget
1141 cctgctgggg tgggtgaggg gaacacccca ttaagctggg ggaactgggg ctgccaccag
1201 ggggCGCGGag gggccttCGc cCGagaagag gtgtgggcag gtgcctccag CGggagaaggg
1261 CGcCGtggcC Ggaggcacag gtctcccCGg tgcccacttca agtgagttCG aggaagtacc
1321 tgggatcttt gatctaaCGC Gaaaggcctt cccagtgacc tcttgagggc tgagaaccca
1381 ctccctccac ctctagtcca CGgctttgcc actccaggc cCGaggttaC Gtttgctgct
1441 ggggatttga caaacccaaa gcctctctgg tttcaccact ggctccttag aatcagacat
1501 ctgttctgaa tgacacttat gtgagtcagg ggctgaggaC GtgatcctCG aagtgtggtc
1561 cccagactgg ctgtatcagt gtcCGgcatcc cccaggacct ggttggaaat gcatattctc
1621 aggccctact ccagacctct taaatctgag actggggctg catctgtgCG
```

FIGURE 8A

1681 ccactatcct tgtgggtgga ccaggagt**CG** gttc**CG**aggt gctcccactt agaggtcac**CG**
1741 **CGCG**g**CGC**t**CG** ggc**CG**ttcctg agac**CG**t**CG**g gctccctggc t**CG**gtca**CG**t gggctcaggc
1801 actactcccc tctaccctcc tctc**CG**gtctt taaaaggaag aagggcctta t**CG**ttaagt**C**
1861 **G**cttgtgatc ttttcagttt ctccagctgc tggctttttg gacaccact ccccC**G**ccag
1921 gaggcagttg caag**CGCG**ga ggctg**CG**aga aataactgcc tcttgaaact tgcaggg**CG**a
1981 ctgggagtcgg gctgcagtcg ctg ggcCGgggag ggcacacacc ggctctgggg
2041 ctg**CG**gggca gggctgg**CGC**g ggc**CG**gggag ggacacacc**CG** agctgcagga ggtg**CG**tc**G** ctttcctcaa
2101 caggttgg**CG**g **CG**ggg**CGCGGC** c**CG**gagcctg agctgcagga cccccctaat g**CG**gggaaag ca**CG**gtgt**CG**g
2161 gattttagag aaggcaaggc **CG**gtgtgtt atctgcaagc gccac**CG**aat
2221 ctttgagaac attataatga cctttgtgcc tctcttgca aggtgtttc tcagctgtta
2281 tctcaaagac gatataaa aaactcacca tctagcctta attctcctc ctcctacaac
2341 tgcagtcaat ccatcttacc cctggagcac **G**gctccatat acatacctta ctcctatgta
2401 gacagccacc atgaatatcc agccatgaca ttctatagcc ctgctgtgat gaattacagc
2461 attcccagca atgtcactaa cttggaaggt gggcc

FIGURE 8B

Unmethylated 288 BP

G ggt**G**tttttg agat**TG**t**TG**g   FUM 21 BP AT 60

TG agttgt**G**tttg ggtttttgg

ccaaaacc **CA**t**CA**caact **CA** RUM 20 BP AT 58

methylated 181 BP

agagtagc**CG** c**CG**cag**CG**t   FM 18 BP AT 60

CGggaaaag ta**CG**tgtt**CG** t   RM 20 BP AT 60

CGaaa**CG**ta cttt**CG**G

FIGURE 8C